this tube having a bulb, *i'*, which is in communication through a flexible pipe, *m*, with a bulb, *n*, secured to or forming part of one arm of a lever, G, the other arm of which is weighted, said lever being connected to the stem *p* of a valve, J, which is constructed, as shown in Fig. 3, so that when in its elevated position it will direct the steam from the supply pipe *s* to the pipe *g* through the coil *w* in the vessel F; but when the valve is lowered it will cut off said coil from communication with the pipe *s*, and will direct the steam through a branch pipe, *x*, to the pipe *g*.

As soon as the heat of the chemical compound in the vessel F rises above the required degree the expansion of the fluid in the tube *i* causes the mercury or other liquid to be forced from the bulb *i'* into the bulb *n*, the weight thus added thereto causing the lever G to tilt, and thus effecting such an operation of the valve J as will direct the steam to the branch *x* and cut off the coils *w*, the steam being directed to the latter again when the temperature of the compound is so far reduced as to effect a contraction of the liquid contents of the tube *i* and a withdrawal of the mercury from the bulb *n*. Check valves prevent backflow through either the coil *w* or branch *x*.

Both the generator and the heating-chamber are preferably provided with gages, as shown, whereby the level of water in the generator or of the solution or compound in the heating-chamber is indicated.

The chemical solution is heated by outside means in starting the generator, and in order that the vapor arising from said solution may be available for work in operating the motor or other apparatus before steam is generated, I provide the heating-vessel B with a valved pipe, *y*, communicating with the discharge-pipe *y'* of the generator, the valve in said pipe *y* being closed when steam under sufficient pressure has been generated.

I claim as my invention—

1. The combination, in a chemical-fuel steam-generator, of the generating-vessel, a fuel-holder contained therein, but accessible from the outside of the generator, and circulating-tubes passing through said fuel-holder, all substantially as specified.

2. The combination, in a chemical-fuel steam-generator, of the generating-vessel, a fuel holder, B, contained therein, a fuel-heater communicating with said holder B, and a pipe for conveying the exhaust-steam first through the fuel-heater, and then into the holder B, all substantially as specified.

3. The combination, in a chemical-fuel steam-generator, of the generating-vessel, the fuel-holder contained therein, the fuel-heater communicating with said holder, a steam-pipe passing through the fuel-heater and having a branch outside of the same, and a valve whereby steam can be caused to pass either directly through the pipe or through the branch, all substantially as specified.

4. The combination of the generator A, the fuel-holder B, contained therein, the supplementary fuel-heater F, containing a steam-coil, a valve controlling the admission of steam to said coil, and a thermostat in the heater for operating said valve, all substantially as specified.

5. The combination of the generator A, the fuel-holder B, contained therein, the supplementary heater F, containing a steam-coil, the pipe *g*, extending into the holder B, the branch *x*, a valve whereby steam may be directed to the pipe *g*, either through the heating-coil in the vessel F or through said branch *x*, and a thermostat for operating said valve, all substantially as specified.

6. The combination of the steam-generator and its pipe *y'* with the fuel-holder B, contained in the generator, and having a valved pipe, *y*, communicating with the pipe *y'*, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARIA E. BEASLEY.

Witnesses:
WILLIAM D. CONNER,
HARRY SMITH.